

### REMARKS

In view of the above amendments and the following remarks, reconsideration and further examination are requested.

By this amendment, claims 24-29 have been canceled and claims 30-35 have been added. Thus, claims 30-35 remain pending. Support for the new claim recitations can be found at least at: column 31, lines 4-13; Fig. 156; and Fig. 160(a). If the Examiner requires further supporting passages, she is invited to contact the undersigned by telephone.

Claims 24-29 were rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 2 and 5 of U.S. Patent 6,256,357 in view of Chung et al., U.S. Patent 5,214,656. Claims 24-29 were also provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 18-23 of copending application no. 09/678,014 in view of Chung. These rejections are traversed and are inapplicable to new claims 30-35.

Each of claims 30 and 32 includes recitations related to first and second ECC encoders, wherein the first ECC encoder is a BCH encoder and the second ECC encoder is a Reed Solomon encoder. Each of claims 31 and 32 includes recitations to first and second ECC decoders wherein the first ECC decoder is a BCH decoder and the second ECC decoder is a Reed Solomon decoder.

Each of method claims 33 and 35 includes recitations related to first and second ECC encoding, wherein the first ECC encoding is a BCH encoding and the second ECC encoding is a Reed Solomon encoding. Each of method claims 34 and 35 includes recitations to first and second ECC decoding wherein the first ECC decoding is a BCH decoding and the second ECC decoding is a Reed Solomon decoding.

As discussed in column 31, lines 4-13, the first and second ECC encoding/decoding can preferably be BCH and Reed Solomon, respectively, (or Reed Solomon and Trellis, respectively). A main consideration in the apparatuses and methods recited in the present application is that the first data stream has data for demodulation for demodulating the modulated signals corresponding to the second data stream, and that, at the receiving side, the demodulator (or demodulating) produces the ECC encoded second data stream according to the data for demodulation. In order to achieve this

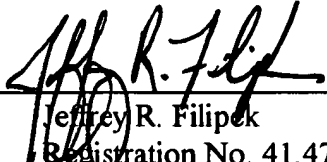
capability, the apparatuses and methods of the present invention utilize BCH encoding/decoding with respect to the first data stream and Reed Solomon encoding/decoding with respect to the second data stream. The importance of this configuration is that the processing time of a BCH encoder is shorter than the processing time of a Reed Solomon encoder. Therefore, by using such a combination of encoders, the first data stream containing data for demodulating the second data stream can be encoded fast and decoded fast. Thus, the second data stream can be encoded and decoded without any delay which might be caused by slow encoding and slow decoding of the first data stream.

As acknowledged by the Examiner, neither of the 6,256,357 patent or the co-pending application 09/678,014 claim first and second ECC encoders or decoders. Thus, the Examiner relied on Chung as a secondary reference. However, Chung does not address any need to be able to ECC encode/decode the first data stream faster than the second data stream, because Chung does not disclose or suggest that the first data stream has data for demodulation for demodulating the modulated signals corresponding to the second data stream, and that, at the receiving side, the demodulator (or demodulating) produces the ECC encoded second data stream according to the data for demodulation in the first data stream as recited in the present application. Accordingly, no obvious combination of Chung with the claims of the 6,256,357 patent or 09/678,014 application would result in the inventions recited in claims 30-35 of the present application. Therefore, it would not have been obvious to a person having ordinary skill in the art at the time the present invention was made, to combine the inventions claimed in either the 6,256,357 patent or the 09/678,014 application with Chung in such a way as to result in, or otherwise render obvious, the inventions recited in claims 30-35 of the present application. For these reasons, claims 30-35 are allowable over the prior art of record and the 6,356,357 patent and 09/678,014 application.

In view of the above amendments and remarks, it is submitted that the present application is in condition for allowance. The Examiner is invited to contact the undersigned attorney by telephone to resolve any remaining issues.

Respectfully submitted,

Mitsuaki OSHIMA et al.

By:   
Jeffrey R. Filipek  
Registration No. 41,471  
Attorney for Patentees

JRF/fs  
Washington, D.C. 20006-1021  
Telephone (202) 721-8200  
Facsimile (202) 721-8250  
April 24, 2003